

CLAIM(S)	CLAIM ELEMENT (PREVIOUSLY RECITED ELEMENTS NOT INCLUDED)	LOCATION OF SUPPORT
1, 23, and 24	Wherein any of R ¹ , R ³ , R ⁴ , R ⁵ , R ⁶ , and R ⁷ may be further substituted with an inert nonhydrogen substituent.	Page 6, lines 7-12.
14	R is selected from the group consisting of 2-methyl-2-adamantyl, 2-methyl-2-isobornyl, 2-methyl-2-tetracyclododecenyl, 2-methyl-2-dihydrodicyclopentadienyl-cyclohexyl, 1-methylcyclopentyl, and 1-methylcyclohexyl.	Paragraph 34, line 4, as filed.
16	R ⁶ is H, C ₁₋₁₂ alkyl, or C ₁₋₁₂ fluoroalkyl.	Page 6, lines 1 and 2.
29	R ¹ is H, F, CN, CH ₃ , CF ₃ , CF ₂ H, or CFH ₂ .	Claim 1, as filed.
30	Wherein at least one of R ¹ , R ³ , R ⁴ , R ⁵ , R ⁶ , or R ⁷ is further substituted with an inert nonhydrogen substituent.	Page 6, lines 7-12.
31	Wherein the inert nonhydrogen substituent is selected from the group consisting of F, C ₁₋₁₂ alkyl, C ₁₋₁₂ alkoxy, C ₁₋₁₂ alkenyl, C ₁₋₁₂ alkenyloxy, C ₁₋₁₂ fluoroalkyl, C ₁₋₁₂ fluoroalkoxy, and C ₁₋₁₂ fluoroalkenyl.	Page 6, lines 7-12

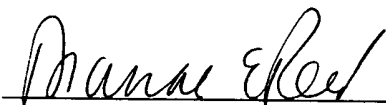
Note that the sections cited as providing support for the various claim elements are not necessarily inclusive of all possible sections that provide support for a particular claim element.

As all amendments and new claims are fully supported by the original disclosure, no new matter has been added, and entry of all amendments and new claims is thus proper.

Should the Examiner have any questions concerning this communication, please contact the undersigned attorney at (650) 330-0900.

Respectfully submitted,

Date: 6/10/02


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APPENDIX B — REPLACEMENT PARAGRAPHS FOR THE SPECIFICATION

The following paragraphs incorporate the revisions made in Appendix A, and, as such, are replacement paragraphs for those in the originally filed specification:

[0013] In one aspect of the invention, then, a novel copolymer is provided that is prepared by copolymerization of a first monomer having the structure of formula (I)



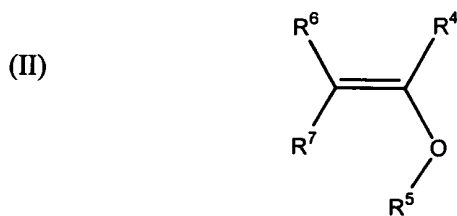
wherein

R¹ is H, F, CN, CH₃, or C₁₋₆ fluoroalkyl (with fluorinated methyl groups, i.e., CF₂H, CFH₂, and CF₃, being preferred C₁₋₆ fluoroalkyl substituents),

R^{2a} and R^{2b} are independently H or F, and

R³ is CN or COOR, wherein R is selected from the group consisting of H, C₁₋₁₂ alkyl, and C₁₋₁₂ fluoroalkyl, or is selected so as to render R³ acid-cleavable, with the proviso that when R³ is CN, then R¹ is CF₃ and R² is H; and

a second monomer having the structure of formula (II)



wherein

R⁴ is H, C₁₋₁₂ alkyl, C₃₋₁₅ alicyclic, or fluorinated C₃₋₁₅ alicyclic;

R⁵ is C₁₋₁₂ alkyl, C₁₋₁₂ alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C₃₋₁₅ alicyclic; or R⁴ and R⁵ together form a five-, six-, or seven-membered ring;

R^6 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl; or R^4 and R^6 together form a five-, six-, or seven-membered ring;

R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl; or R^7 and R^5 together represent

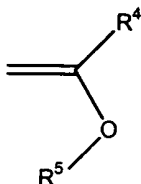
$-X-(CR^8R^9)_n-$, in which case R^4 and R^6 are H, X is O or CH_2 , n is 1 or 2; and

R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or together form an oxo moiety ($=O$), with the proviso that when R^8 and R^9 together form $=O$, n is 1.

Further, any carbon atoms indicated in the aforementioned definitions as unsubstituted may in fact be substituted with one or more inert, nonhydrogen substituents such as, for the alicyclic groups, F or C_{1-6} fluoroalkyl (preferably fluorinated methyl, i.e., CFH_2 , CHF_2 or CF_3), and for other substituents, C_{1-12} alkyl, C_{1-12} alkoxy, C_{1-12} alkenyl, C_{1-12} alkenyloxy, C_{1-12} fluoroalkyl, C_{1-12} fluoroalkoxy, C_{1-12} fluoroalkenyl, wherein any of the aforementioned substituents, with the exception of F, may be further substituted with additional moieties, e.g., hydroxyl groups.

[0036] In a preferred embodiment, the second monomer has the structure of formula (III)

(III)



wherein R^4 and R^5 are as defined above. Ethyl vinyl ether, adamantyl-vinyl ethyl ether, and *t*-butyl vinyl ether are examples of suitable second monomers that fall within the structure of formula (III).

APPENDIX A -- AMENDMENTS TO THE SPECIFICATION

Please amend paragraphs 13 and 36 as indicated below. Text to be deleted is indicated as ~~deleted text~~, while added subject matter is underlined.

[0013] In one aspect of the invention, then, a novel copolymer is provided that is prepared by copolymerization of a first monomer having the structure of formula (I)



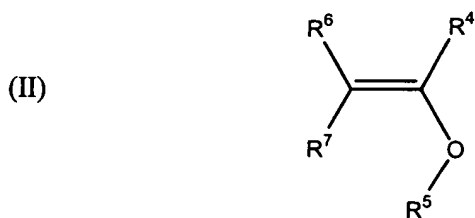
wherein

R^1 is H, F, CN, CH_3 , or C_{1-6} fluoroalkyl (with fluorinated methyl groups, i.e., CF_2H , CFH_2 , and CF_3 , being preferred C_{1-6} fluoroalkyl substituents),

R^{2a} and R^{2b} are independently H or F, and

R^3 is CN or COOR, wherein R is selected from the group consisting of H, C_{1-12} alkyl, and C_{1-12} fluoroalkyl, or is selected so as to render R^3 acid-cleavable, with the proviso that when R^3 is CN, then R^1 is CF_3 and R^2 is H; and

a second monomer having the structure of formula (II)



wherein

R^4 is H, C_{1-12} alkyl, C_{3-15} alicyclic, or fluorinated C_{3-15} alicyclic;

R^5 is C_{1-12} alkyl, C_{1-12} alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C_{3-15} alicyclic; or R^4 and R^5 together form a five-, six-, or seven-membered ring;

R^6 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl; or R^4 and R^6 together form a five-, six-, or seven-membered ring;

R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl; or R^7 and R^5 together represent

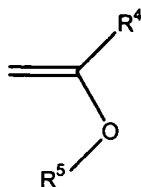
$-X-(CR^8R^9)_n-$, in which case R^4 and R^6 are H, X is O or CH_2 , n is 1 or 2; and

R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or together form an oxo moiety ($=O$), with the proviso that when R^8 and R^9 together form $=O$, n is 1.

Further, any carbon atoms indicated in the aforementioned definitions as unsubstituted may in fact be substituted with one or more inert, nonhydrogen substituents such as, for the alicyclic groups, F or C_{1-6} fluoroalkyl (preferably fluorinated methyl, i.e., CFH_2 , CHF_2 or CF_3), and for other substituents, C_{1-12} alkyl, C_{1-12} alkoxy, C_{1-12} alkenyl, C_{1-12} alkenyloxy, C_{1-12} fluoroalkyl, C_{1-12} fluoroalkoxy, C_{1-12} fluoroalkenyl, wherein any of the aforementioned substituents, with the ~~example exception~~ of F, may be further substituted with additional moieties, e.g., hydroxyl groups.

[0036] In a preferred embodiment, the second monomer has the structure of formula (III)

(III)



wherein R^4 and R^5 are as defined above. Ethyl vinyl ether, ~~adamantly-vinyl~~ adamantyl-vinyl ethyl ether, and *t*-butyl vinyl ether are examples of suitable second monomers that fall within the structure of formula (III).

APPENDIX D - PENDING CLAIMS UPON ENTRY OF THIS AMENDMENT

1. A copolymer prepared by copolymerization of a first monomer having the structure of formula (I)

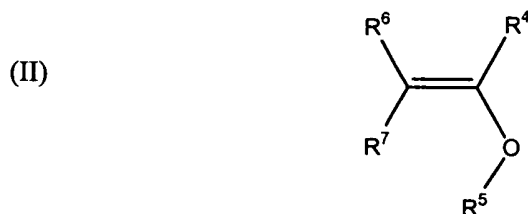


wherein

R^1 is H, F, CN, CH_3 , or C_{1-6} fluoroalkyl,

R^{2a} and R^{2b} are independently H or F, and

R^3 is CN or COOR, wherein R is selected from the group consisting of H, C_{1-12} alkyl and C_{1-12} fluoroalkyl, or is selected so as to render R^3 acid-cleavable; and
a second monomer having the structure of formula (II)



wherein

R^4 is H, C_{1-12} alkyl, C_{3-15} alicyclic, or fluorinated C_{3-15} alicyclic,

R^5 is C_{1-12} alkyl, C_{1-12} alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C_{3-15} alicyclic, or R^4 and R^5 together form a five-, six-, or seven-membered ring,

R^6 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^4 and R^6 together form a five-, six-, or seven-membered ring, and

R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^7 and R^5 together represent $-X-(CR^8R^9)_n-$, in which case R^4 and R^6 are H, X is O or CH_2 , n is 1 or 2, R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or together form an oxo moiety ($=O$), with the proviso that when R^8 and R^9 together form $=O$, n is 1,

wherein any of R^1 , R^3 , R^4 , R^5 , R^6 , and R^7 may be further substituted with an inert, nonhydrogen substituent.

2. The copolymer of Claim 29, wherein R^1 is CF_3 .
3. The copolymer of Claim 2, wherein R^3 is COOR.
4. The copolymer of Claim 2, wherein R^3 is CN.
5. The copolymer of Claim 1, wherein R^1 and R^2 are F and R^3 is COOR.
6. The copolymer of Claim 1, wherein R^1 is CN and R^2 is H.
7. The copolymer of Claim 3, wherein R is C_{1-12} alkyl.
8. The copolymer of Claim 5, wherein R is C_{1-12} alkyl.
9. The copolymer of Claim 3, wherein R is selected to render R^3 acid-cleavable.
10. The copolymer of Claim 5, wherein R is selected to render R^3 acid-cleavable.
11. The copolymer of Claim 10, wherein R is a tertiary alkyl substituent.
12. The copolymer of Claim 11, wherein R is *t*-butyl.
13. The copolymer of Claim 11, wherein R is a C_5 - C_{12} cyclic or alicyclic substituent with a tertiary attachment point.
14. The copolymer of Claim 13, wherein R is selected from the group consisting of 2-methyl-2-adamantyl, 2-methyl-2-isobornyl, 2-methyl-2-tetracyclododecenyl, 2-methyl-2-dihydrodicyclopentadienyl-cyclohexyl, 1-methylcyclopentyl, and 1-methylcyclohexyl.

15. The copolymer of Claim 1, wherein the second monomer has the structure of formula (III)

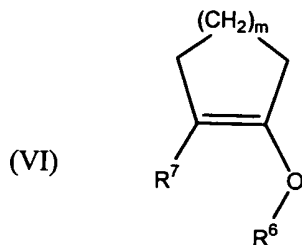
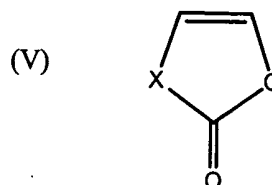
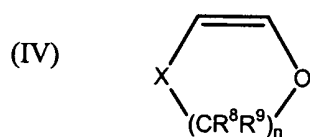


wherein:

R^4 is H, C_{1-12} alkyl, C_{3-15} alicyclic, or fluorinated C_{3-15} alicyclic; and

R^5 is C_{1-12} alkyl, C_{1-12} alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C_{3-15} alicyclic.

16. The copolymer of Claim 1, wherein the second monomer has a structure selected from the group consisting of (IV), (V), and (VI)



wherein:

R^6 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl;

R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl;

X is O or CH_2 ;

m is an integer between 1 and 3; and

R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl.

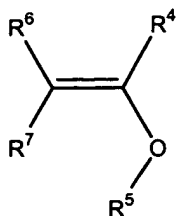
17. The copolymer of Claim 1, wherein the copolymer is substantially transparent to radiation having a wavelength of less than about 250 nm.
18. The copolymer of Claim 17, wherein the copolymer is substantially transparent to radiation having a wavelength of less than about 193 nm.
19. The copolymer of Claim 18, wherein the copolymer is substantially transparent to radiation having a wavelength of 157 nm.
20. The copolymer of Claim 1, further comprising at least one additional monomer having a structure that is different that the first and second monomers.
21. A lithographic photoresist composition comprising the copolymer of Claim 1 and a radiation-sensitive acid generator.
22. The lithographic photoresist composition of Claim 18, further comprising a second polymer.
23. A process for generating a resist image on a substrate, comprising the steps of:
(a) coating a substrate with a film of a photoresist comprised of a radiation-sensitive acid generator and a copolymer synthesized from a first monomer having the structure of formula (I)



wherein

- R¹ is H, F, CN, CH₃, or C₁₋₆ fluoroalkyl,
R^{2a} and R^{2b} are independently H or F, and
R³ is CN or COOR, wherein R is selected from the group consisting of H, C₁₋₁₂ alkyl and C₁₋₁₂ fluoroalkyl, or is selected so as to render R³ acid-cleavable, with the proviso that when R³ is CN, then R¹ is CF₃ and R^{2a} and R^{2b} are H; and
a second monomer having the structure of formula (II)

(II)



wherein

R^4 is H, C_{1-12} alkyl, C_{3-15} alicyclic or fluorinated C_{3-15} alicyclic,

R^5 is C_{1-12} alkyl, C_{1-12} alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C_{3-15} alicyclic, or R^4 and R^5 together form a five-, six-, or seven-membered ring,

R^6 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^4 and R^6 together form a five-, six-, or seven-membered ring,

R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^7 and R^5 together represent $-X-(CR^8R^9)_n-$, in which case R^4 and R^6 are H, X is O or CH_2 , n is 1 or 2, R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or together form an oxo moiety ($=O$), with the proviso that when R^8 and R^9 together form $=O$, n is 1,

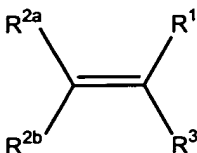
wherein any of R^1 , R^3 , R^4 , R^5 , R^6 , and R^7 may be further substituted with an inert nonhydrogen substituent;

(b) exposing the film selectively to a predetermined pattern of radiation so as to form a latent, patterned image in the film; and

(c) developing the latent image with a developer.

24. In a lithographic photoresist composition comprised of a polymer transparent to deep ultraviolet radiation and a radiation-sensitive acid generator, the improvement comprising employing as the polymer a copolymer synthesized from a first monomer having the structure of formula (I)

(I)

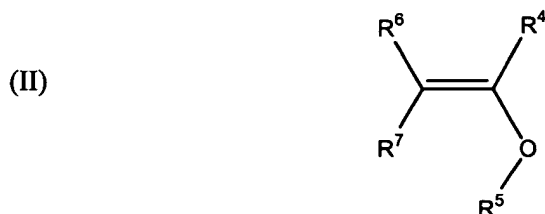


wherein

R^1 is H, F, CN, CH_3 , or C_{1-6} fluoroalkyl,

R^{2a} and R^{2b} are independently H or F, and

R^3 is CN or COOR, wherein R is selected from the group consisting of H, C_{1-12} alkyl and C_{1-12} fluoroalkyl, or is selected so as to render R^3 acid-cleavable, with the proviso that when R^3 is CN, then R^1 is CF_3 and R^2 is H, and
 a second monomer having the structure of formula (II)



wherein

R^4 is H, C_{1-12} alkyl, C_{3-15} alicyclic, or fluorinated C_{3-15} alicyclic,
 R^5 is C_{1-12} alkyl, C_{1-12} alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C_{3-15} alicyclic, or R^4 and R^5 together form a five-, six-, or seven-membered ring,
 R^6 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^4 and R^6 together form a five-, six-, or seven-membered ring;
 R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^7 and R^5 together represent $-X-(CR^8R^9)_n-$, in which case R^4 and R^6 are H, X is O or CH_2 , n is 1 or 2, R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or together form an oxo moiety ($=O$), with the proviso that when R^8 and R^9 together form $=O$, n is 1,
 wherein any of R^1 , R^3 , R^4 , R^5 , R^6 , and R^7 may be further substituted with an inert nonhydrogen substituent.

25. The lithographic photoresist composition of Claim 24, wherein the photoresist composition is a positive resist and further comprises a photoacid-cleavable monomeric or polymeric dissolution inhibitor.

26. The lithographic photoresist composition of Claim 24, wherein the photoresist composition is a negative resist and further comprises a crosslinking agent.

27. The lithographic photoresist composition of Claim 26, wherein the crosslinking agent is a glycoluril compound.

28. The lithographic photoresist composition of Claim 27, wherein the glycoluril compound is selected from the group consisting of tetramethoxymethyl glycoluril, methylpropyltetramethoxymethyl glycoluril, methylphenyltetramethoxymethyl glycoluril, and mixtures thereof.

29. The copolymer of claim 1, wherein R^1 is H, F, CN, CH_3 , CF_3 , CF_2H , or CFH_2 .

30. The copolymer of claim 29, wherein at least one of R^1 , R^3 , R^4 , R^5 , R^6 , or R^7 is further substituted with an inert nonhydrogen substituent.

31. The copolymer of claim 30, wherein the inert nonhydrogen substituent is selected from the group consisting of F, C_{1-12} alkyl, C_{1-12} alkoxy, C_{1-12} alkenyl, C_{1-12} alkenyloxy, C_{1-12} fluoroalkyl, C_{1-12} fluoroalkoxy, and C_{1-12} fluoroalkenyl.

APPENDIX C - AMENDMENTS TO THE CLAIMS

Please amend claims 1, 2, 14-16, 23, and 24 and add new claims 43-46 as indicated below. Text to be deleted is indicated as ~~deleted text~~, while added subject matter is underlined.

1. (Amended) A copolymer prepared by copolymerization of a first monomer having the structure of formula (I)



wherein

R¹ is H, F, CN, CH₃, ~~CF₃, CF₂H, or CFH₂~~, or C₁₋₆ fluoroalkyl,

R^{2a} and R^{2b} are independently H or F, ~~and~~

R³ is CN or COOR, wherein R is selected from the group consisting of H, C₁₋₁₂ alkyl and C₁₋₁₂ fluoroalkyl, or is selected so as to render R³ acid-cleavable; and
 a second monomer having the structure of formula (II)



wherein

R⁴ is H, C₁₋₁₂ alkyl, ~~or C₃₋₁₅ alicyclic~~, or fluorinated C₃₋₁₅ alicyclic,

R⁵ is C₁₋₁₂ alkyl, C₁₋₁₂ alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C₃₋₁₅ alicyclic, or R⁴ and R⁵ together form a five-, six-, or seven-membered ring,

R⁶ is H, C₁₋₁₂ alkyl, or C₁₋₁₂ fluoroalkyl, or R⁴ and R⁶ together form a five-, six-, or seven-membered ring, and

R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^7 and R^5 together represent $-X-(CR^8R^9)_n-$, in which case R^4 and R^6 are H, X is O or CH_2 , n is 1 or 2, R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or together form an oxo moiety ($=O$), with the proviso that when R^8 and R^9 together form $=O$, n is 1,

wherein any of R^1 , R^3 , R^4 , R^5 , R^6 , and R^7 may be further substituted with an inert, nonhydrogen substituent.

2. (Amended) The copolymer of Claim 1, wherein R^1 is CF_3 .

14. (Amended) The copolymer of Claim 13, wherein R is selected from the group consisting of 2-methyl-2-adamantyl, 2-methyl-2-isobornyl, 2-methyl-2-tetracyclododecenyl, 2-methyl-2-dihydrodicyclopentadienyl-cyclohexyl, 1-methylcyclopentyl, and 1-methylcyclohexyl.

15. (Amended) The copolymer of Claim 1, wherein the second monomer has the structure of formula (III)

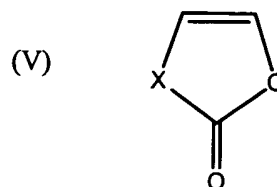
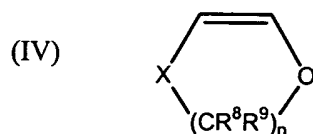


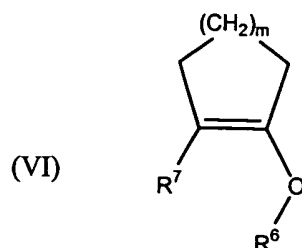
wherein:

R^4 is H, C_{1-12} alkyl, ~~or~~ C_{3-15} alicyclic, or fluorinated C_{3-15} alicyclic; and

R^5 is C_{1-12} alkyl, C_{1-12} alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C_{3-15} alicyclic.

16. (Amended) The copolymer of Claim 1, wherein the second monomer has a structure selected from the group consisting of (IV), (V), and (VI)





wherein:

~~R⁵ is C₁₋₁₂ alkyl, C₁₋₁₂ alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C₂₋₁₂ alicyclic; R⁶ is H, C₁₋₁₂ alkyl, or C₁₋₁₂ fluoroalkyl;~~

R⁷ is H, C₁₋₁₂ alkyl, or C₁₋₁₂ fluoroalkyl;

X is O or CH₂;

m is an integer between 1 and 3;

R⁸ and R⁹ are H, C₁₋₁₂ alkyl, or C₁₋₁₂ fluoroalkyl.

23. (Amended) A process for generating a resist image on a substrate, comprising the steps of:

(a) coating a substrate with a film of a photoresist comprised of a radiation-sensitive acid generator and a copolymer synthesized from a first monomer having the structure of formula (I)



wherein

R¹ is H, F, CN, CH₃, ~~CF₃, CF₂H, or CFH₂;~~ or C₁₋₆ fluoroalkyl,

R^{2a} and R^{2b} are independently H or F;

R³ is CN or COOR, wherein R is selected from the group consisting of H, C₁₋₁₂ alkyl and C₁₋₁₂ fluoroalkyl, or is selected so as to render R³ acid-cleavable, with the proviso that when R³ is CN, then R¹ is CF₃ and R^{2a} and R^{2b} are H; and

a second monomer having the structure of formula (II)



wherein

R^4 is H, C_{1-12} alkyl, ~~or~~ C_{3-15} alicyclic or fluorinated C_{3-15} alicyclic,

R^5 is C_{1-12} alkyl, C_{1-12} alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C_{3-15} alicyclic, or R^4 and R^5 together form a five-, six-, or seven-membered ring,

R^6 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^4 and R^6 together form a five-, six-, or seven-membered ring,

R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^7 and R^5 together represent $-X-(CR^8R^9)_n-$, in which case R^4 and R^6 are H, X is O or CH_2 , n is 1 or 2, R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or together form an oxo moiety ($=O$), with the proviso that when R^8 and R^9 together form $=O$, n is 1,

wherein any of R^1 , R^3 , R^4 , R^5 , R^6 , and R^7 may be further substituted with an inert nonhydrogen substituent;

(b) exposing the film selectively to a predetermined pattern of radiation so as to form a latent, patterned image in the film; and

(c) developing the latent image with a developer.

24. (Amended) In a lithographic photoresist composition comprised of a polymer transparent to deep ultraviolet radiation and a radiation-sensitive acid generator, the improvement comprising employing as the polymer a copolymer synthesized from a first monomer having the structure of formula

(I)



wherein

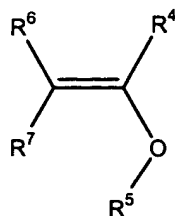
R^1 is H, F, CN, CH_3 , CF_3 , CF_2H , ~~or~~ CFH_2 , or C_{1-6} fluoroalkyl,

R^{2a} and R^{2b} are independently H or F_{1-2} and

R^3 is CN or COOR, wherein R is selected from the group consisting of H, C_{1-12} alkyl and C_{1-12} fluoroalkyl, or is selected so as to render R^3 acid-cleavable, with the proviso that when R^3 is CN, then R^1 is CF_3 and R^2 is H_{1-2} and

a second monomer having the structure of formula (II)

(II)



wherein

R^4 is H, C_{1-12} alkyl, ~~or~~ C_{3-15} alicyclic, or fluorinated C_{3-15} alicyclic,

R^5 is C_{1-12} alkyl, C_{1-12} alkyl substituted with 1-12 fluorine atoms and 0-2 hydroxyl groups, or C_{3-15} alicyclic, or R^4 and R^5 together form a five-, six-, or seven-membered ring,

R^6 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^4 and R^6 together form a five-, six-, or seven-membered ring;

R^7 is H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or R^7 and R^5 together represent $-X-(CR^8R^9)_n-$, in which case R^4 and R^6 are H, X is O or CH_2 , n is 1 or 2, R^8 and R^9 are H, C_{1-12} alkyl, or C_{1-12} fluoroalkyl, or together form an oxo moiety ($=O$), with the proviso that when R^8 and R^9 together form $=O$, n is 1,

wherein any of R^1 , R^3 , R^4 , R^5 , R^6 , and R^7 may be further substituted with an inert nonhydrogen substituent.

Please add the following new claims 29-31, as indicated below.

29. (New) The copolymer of claim 1, wherein R^1 is H, F, CN, CH_3 , CF_3 , CF_2H , or CFH_2 .

30. (New) The copolymer of claim 29, wherein at least one of R^1 , R^3 , R^4 , R^5 , R^6 , or R^7 is further substituted with an inert nonhydrogen substituent.

31. (New) The copolymer of claim 30, wherein the inert nonhydrogen substituent is selected from the group consisting of F, C_{1-12} alkyl, C_{1-12} alkoxy, C_{1-12} alkenyl, C_{1-12} alkenyloxy, C_{1-12} fluoroalkyl, C_{1-12} fluoroalkoxy, and C_{1-12} fluoroalkenyl.